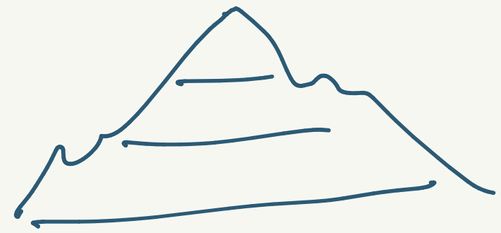
- Mountains (¼ of Earth's land surface)
  span biomes



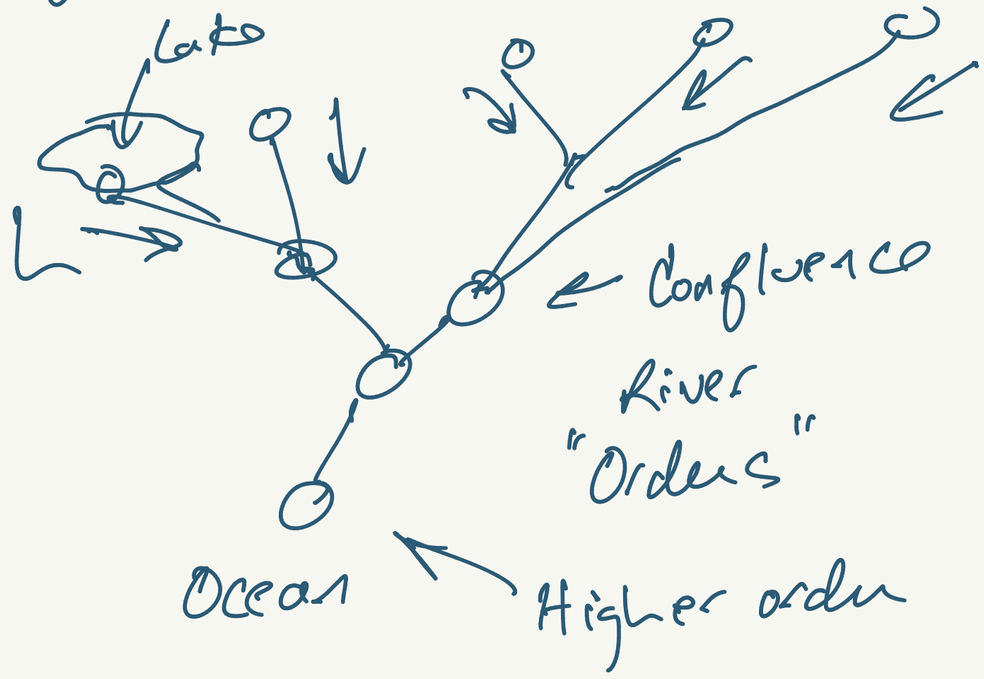
  - ecological communities occur in elevational bands
  - Elevational gradient mirrors latitudinal gradient
  - Rocky Mtns: grasslands / Pine Savannas / Alpine transition zones →

7200 ft

- Treeline similar to boreal forest / tundra transition

- Freshwater biological zones
  - Rivers & Lakes
    - Communities in streams and rivers vary w/ stream site and location w/in the stream

- All of the Earth's landsurface is a river basin




Largest Rivers ~ 6 orders

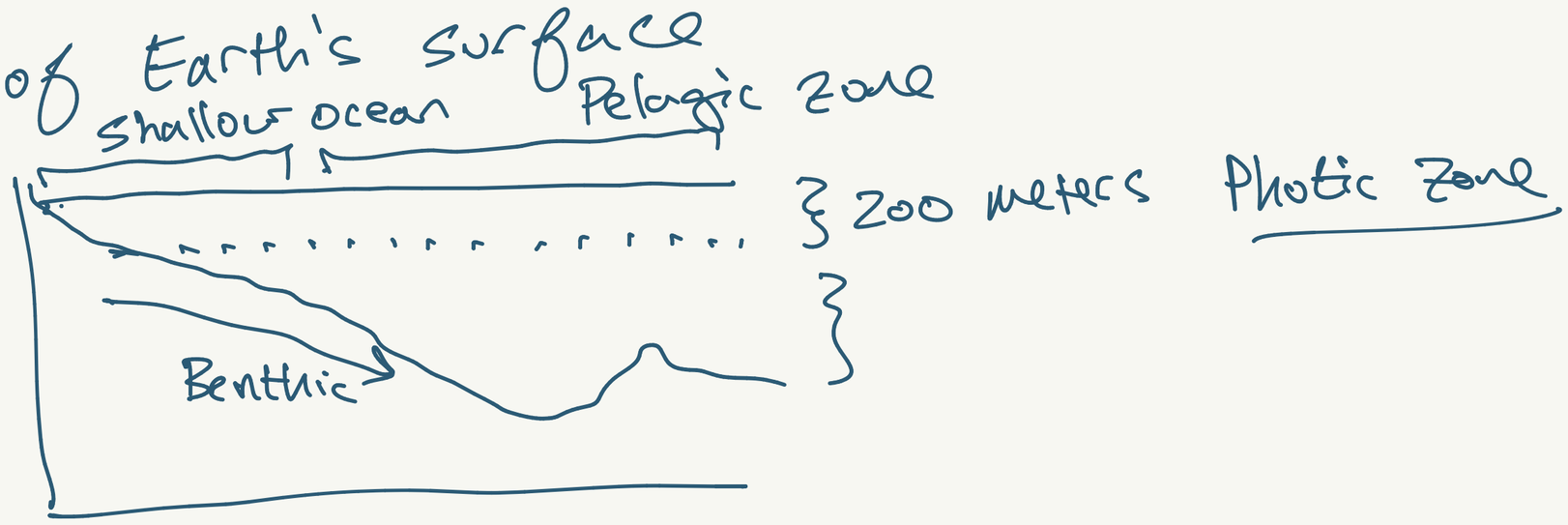
- swimming organisms (fish) tend to live in high-flow regions

- Bottom (Benthic zone) ~ invertebrates

- Substrate ~~is~~ below/adjacent to stream is ~~home~~ home
  to insects/copepods/rotifers (= ~~hyporheic~~ hyporheic zone)
  hyporheic zone

# Marine Biological Zones

71% of Earth's surface




~~Marine~~ Marine communities are a challenge to categorize

y/c species tend to be mobile

Nearshore: tidal forces ~~#~~ have a large impact

- Intertidal communities must be ~~marine~~ marine & terrestrial

  - temp.
  - salinity
  - Desiccation (drying)

Shallow Ocean: Diverse and productive

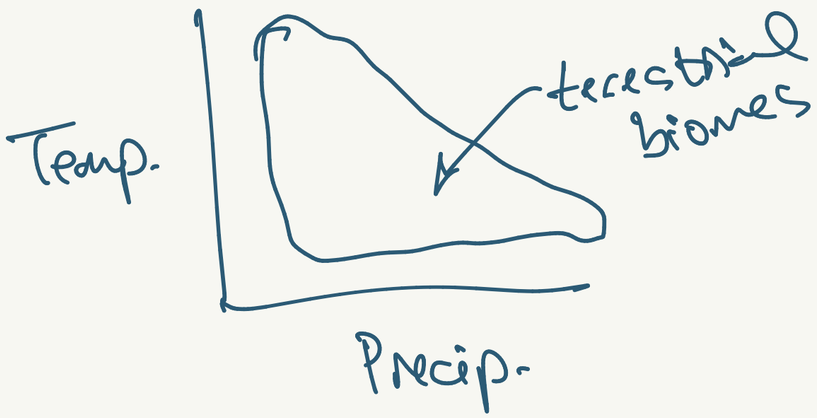
- high light input
- Physical structure ~ form habitat
  - High diversity of 1° producers
    → high diversity of 2° consumers

Open ocean (Pelagic) & Deep Benthic

↳ Light penetration is primary limit for photosynthetic organism

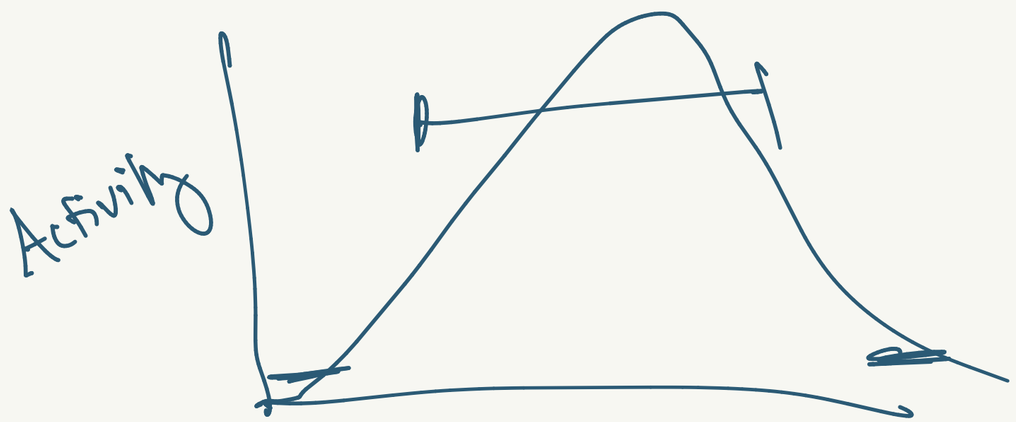
- Falling debris, migrating species

# Chapter 4: Temperature & Water




- Specis distributions reflect the physiological limitations
  - The physical environment affects an organisms ability to grow & reproduce
- Changes in temperature control population growth rates via
  1) imposing constraints on function - rate of rxns
  2) Morbility (extreme shifts) - time available to carry out functions

- How does temperature impact activity




temperature